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**Microgrids - Part 3-5: Testing for microgrid monitoring, control,
and energy management systems**

微电网 第3-5部分：微电网监控及能量管理系统测试

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Foreword

This document is a standard or guiding technical document. This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Electricity Council. This document is under the jurisdiction of the National Technical Committee on Standardization of Microgrids and Distributed Power Generation (SAC/TC564). This document was drafted by: China Southern Power Grid Science Research Institute Co., Ltd., China Guodian Nanjing Automation Co., Ltd., and China Electric Power Research Institute. Hunan University, Hunan University, Guangdong Shunde Testing & Research Institute Co., Ltd., NARI Technology Co., Ltd., Xuchang Kaipu Testing & Research Institute Co., Ltd., Hunan University, Guangdong Shunde Testing & Research Institute Co., Ltd. German Electric Power Design Institute Co., Ltd., Hefei Huasi System Co., Ltd., Guizhou Power Grid Co., Ltd., Xi'an Xituo Electric Co., Ltd. The company, China Southern Power Grid Digital Grid Research Institute Co., Ltd., Guangzhou Power Supply Bureau of Guangdong Power Grid Co., Ltd., and Beijing Sifang Automation Co., Ltd. Chemical Co., Ltd. The main drafters of this document are. Tan Yingjie, Bai Hao, He Huawei, Liu Yipeng, Xu Mengyang, Zhang Yao, Yu Yuehai, Shuai Zhikang, Liu Tong, and Ke Haishan. Zhou Cheng, Pang Tao, He Lili, Li Wei, He Xiaomeng, Zhao Liang, Li Yue, Hua Guanghui, Liang Yongquan, Chen Wei, Bao Baizhou, Zhang Xing, Liu Hongwen, Zhao Xin. Microgrids Parts 3-

1 Scope

This document sets out the overall requirements, the test conditions and the test methods for the monitoring, control and energy management systems of a microgrid, and applies to

microgrids operating at 35 kV and below. The control system is what makes a microgrid a grid rather than a collection of equipment: it decides when to island, how to share load between generation and storage, and how to come back onto the main grid without disturbing it. Those behaviours can only be trusted if they have been tested, and this part of GB/Z 120 says how the testing is done. Issued on 28 January 2026 by SAMR and SAC as a guiding technical document, under the technical jurisdiction of the China Electricity Council. Part 3-5 of the microgrid series.

This document specifies the general requirements, test conditions, and test items for microgrid monitoring and energy management system testing, and describes the corresponding test... Try different methods. This document applies to the testing of monitoring and energy management systems for microgrids with voltage levels of 35kV and below.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 12325 Power Quality - Supply Voltage Deviation

GB/T 15945 Power Quality - Frequency Deviation of Power Systems

GB/T 19582 (all parts) Industrial Automation Network Specification Based on Modbus Protocol

GB/T 36270 Technical Specification for Microgrid Monitoring Systems

GB/T 36274 Technical Specification for Microgrid Energy Management System DL/T 634.5101 Telemetry Equipment and Systems Part 5-101. Basic Telemetry Mission Supporting Standards for Transmission Protocols DL/T 634.5104 Telecontrol Equipment and Systems - Part 5-104. Transmission Protocols Adopting the Standard Transmission Protocol Set of

IEC 60870 5-101 Network Access DL/T 667 Telecontrol Equipment and Systems Part

5. Transmission Protocols Chapter 103. Supporting Standards for Information Interfaces of Relay Protection Equipment DL/T 860 (All Parts) Power Automation Communication Networks and Systems DL/T 2336 Network Security Testing Requirements for Power Monitoring System Equipment and Software

3 Terms and Definitions

The terms and definitions defined in GB/T 36270 apply to this document.

4 General Requirements

4.1 A test plan should be prepared before testing the microgrid monitoring and energy management system. The test plan should include the test basis, test objectives, and test equipment. The content includes preparation, test content, and test methods.

4.2 The working environment, including the computer room and site, for testing microgrid monitoring and energy management systems should meet the requirements of GB/T 36270 and GB/T 36274. Require.

4.3 Records should be kept during the testing process, and a test report should be prepared after the test. The test results should meet the requirements of GB/T 36270 and GB/T 36274. The requirements and examples of test result recording are shown in Appendix A. The test report should include the test basis, test environment, test items, test data, and test results. The test results and other related information.